

Students' Reflective Essays as insights into Student Centred-Pedagogies within the Undergraduate Research Methods Curriculum

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Abstract

In higher education, despite the emphasis on student-centred pedagogical approaches, undergraduate research methods pedagogy remains surprisingly teacher-directed. Consequently, it may lead to research methods students assuming that becoming a researcher involves gathering information rather than it being a continuous developmental process. To combat this idea, a reflective student-centred pedagogical approach is evaluated for encouraging students' development as researchers. In this study, undergraduate research methods students piloted a research method and produced a reflective essay of their research experience. Qualitative analysis of the students' reflective essay demonstrated that students showed an awareness of both their research skills such as choosing an appropriate research instrument and their researcher identity such as the metacognition of their research competence. Pedagogical approaches that encourage 'reflection on action' in the research curriculum can, therefore, help students to articulate their researcher identity and build their research skills confidence and should be actively promoted.

student-centred approach, enquiry-based learning, research methods, reflective essays, curriculum

Introduction

Since their publication on the teaching-research nexus, Jenkins and Healey (2005) have advocated that undergraduate students worldwide, should engage in research. Healey and Jenkins (2009) suggested that all learning at the undergraduate level should involve research. The main vehicle for undergraduate research in the UK Social Science disciplines is the research project/ dissertation undertaken by students in the final year

of their degree programme (Jenkins and Healey 2009, Beckman and Hensel 2009).

Although dissertations are the mainstay in the mainstream Social Science degrees such as Sociology and Politics, in other Social Science degree programmes the dissertation is still not a compulsory part. For example, Southampton Solent University offers a Tourism degree without a dissertation. The lack of dissertations is a feature that is shared in other countries. For example, Parker (2008) found in a Politics degree survey that there was an absence of a research dissertation in a majority of the programmes in Australia, Canada, Norway, Spain and the USA.

In the last decade, several UK Social Science degree programmes with a dissertation have introduced separate compulsory research methods modules to support the research dissertation and hence they have a two-part research curriculum. There may be a multitude of underpinning factors for these changes such as Jenkins and Healey (2005) advocacy, the new UK Quality Assurance Agency (QAA) guidelines or institutions recognising the need to support students' research dissertation. The inclusion of compulsory research methods modules is not a trend exclusive to the UK; Thies and Hogan (2005) noted an increase in compulsory research methods modules in USA degrees. Typically, within the UK, the research methods modules feature in the second year of the three-year degree programme (see for example Benson and Blackman 2003, Hosein and Rao 2012, Edwards and Thatcher 2004). For example, the compulsory research methods modules in the Education Studies degree programme at

Liverpool Hope University were introduced in 2010 during the students' second year of their degree. However, there are still some degree programmes which do not have a two-part research curriculum, that is, a separate research methods module is absent even when there is a research project/ dissertation, such as in the University of Exeter's BA International Relations programme.

As undergraduate research methods modules become increasingly popular, there is a compelling need to focus on the development of appropriate pedagogical approaches and/or curriculum for this field. Although the establishment of the research methods pedagogy field is slow (Garner, Wagner, and Kawulich 2009, Wagner, Garner, and Kawulich 2011, Earley 2014), there is a range of literature exploring how research methods could be taught at all levels (see for a review Wagner, Garner, and Kawulich 2011, and the excellent edited book by Garner, Wagner, and Kawulich 2009, Earley 2014). The literature on research methods pedagogy provides suggestions on how studying this area impacts on students' cognitive skills (Barak 1998, Earley 2009), their future jobs (Barak 1998, Hosein and Rao 2012) and their conceptions and/ or attitudes towards research and research methods (Hosein and Rao 2012, Kawulich, Garner, and Wagner 2009, Meyer, Shanahan, and Laugksch 2005, Murtonen 2005, Murtonen and Lehtinen 2005).

However, there appears to be limited empirical research on how the pedagogical approaches adopted within the research methods component of the undergraduate

research curriculum can support the students' development as a researcher such as their experiential knowledge of the research processes needed for completing the undergraduate research project (see Strayhorn 2009); research in this area tends to focus more on the supervisor-supervisee relationship (see for example Leahey 2006). Moreover, undergraduate students often are reported as having a negative attitude towards research methods as they consider it to be dry and irrelevant to their research project (Schofield and Burton 2011, Benson and Blackman 2003, Edwards and Thatcher 2004, Strayhorn 2009). Further, in most universities, research methods modules are taught in large group sessions which use a lecture and/or seminar format. This may encourage a knowledge transmission or teacher-directed pedagogical approach where students are more likely to engage passively with research (Biggs 1999, Strayhorn 2009) and can lead to their negative attitude.

The concept of teacher-directed pedagogical approaches is based on the classification of higher education teachers' beliefs and conceptions (see Samuelowicz and Bain 2001, Samuelowicz and Bain 1992, Trigwell, Prosser, and Waterhouse 1999, Stes and Van Petegem 2014). Research has suggested that these beliefs and conceptions affect the practice of teachers and hence their pedagogical approaches which can range from being teacher-directed to student-centred and anywhere in-between (see Kane, Sandretto, and Heath 2002, Stes, Gijbels, and Van Petegem 2007 for reviews). For example, Kember and Kwan (2000) have found that teachers who held mainly a

knowledge transmission belief of teaching used normally a teacher-directed pedagogical approach whilst those teachers with mainly a facilitative belief had normally a student-centred pedagogical approach. Teachers with mainly a teacher-directed pedagogical approach are more likely to impart information (such as through lectures) and train students for specific jobs whilst those teachers with mainly a student-centred pedagogical approach are more likely to use facilitative teaching that encourages problem-solving and interactive teaching (such as small group teaching) (Norton et al. 2005). Both Trigwell, Prosser, and Waterhouse (1999) and Samuelowicz and Bain (1992) provide further examples on how the different levels of teacher-directed and student-centred pedagogical approaches may be manifested as well as where these pedagogical approaches begin to converge.

These beliefs are not an intrinsic trait of the teacher but rather varies depending on the teaching context and discipline (Lindblom-Ylänne et al. 2006). Therefore, any teacher can engage in a range of teacher-directed or student-centred pedagogical approaches. For example, certain contexts such as large class teaching may encourage teachers to use a more teacher-directed pedagogical approach (such as lectures) because of resource constraints (such as timetabling, human resources) but this does not have to be the default position as student-centred pedagogical approaches have been implemented successfully in large classes (see for example Crouch and Mazur 2001, Crouch et al. 2007). However, the adoption of student-centred pedagogies may be

influenced by teachers' perceptions of external pressures such as teaching load (Struyven, Dochy, and Janssens 2010, Prosser and Trigwell 2014) as they may be perceived as requiring more time and effort to set up.

Further, Trigwell, Prosser, and Waterhouse (1999) (and corroborated more recently by Prosser and Trigwell 2014) have found that a mainly knowledge transmission belief of teachers is likely to encourage surface learning (such as memorising material) whilst that of a mainly facilitative belief is likely to promote deep learning (such as relating ideas) amongst students. A possible reason, for this, is that these beliefs affect the pedagogical approaches including aspects such as assessment and curriculum design which in turn influences how students learn (Medland 2016, Knight 2001).

Therefore, a potential issue of using mainly a teacher-directed approach may be that designed assessments can encourage a surface learning approach through the memorising and recalling of procedures, facts and information amongst students (Trigwell, Prosser, and Waterhouse 1999) leading to students being assessed on their 'accumulation of discrete skills and facts' (Watkins, Dahlin, and Ekholm 2005, Nicol and Macfarlane-Dick 2006). These assessments can also happen in student-centred pedagogical approaches as well, but teacher-directed pedagogical approaches due to their focus on knowledge transmission may lend themselves to these types of assessments more easily than other types of assessments. For example, students in a

teacher-directed research methods module may be more likely to be separately assessed on their survey design, the ability to perform statistical tests and to write a literature review (Crowe, Ceresola, and Silva 2013). Students may then judge their research ability on their capability of reproducing these discrete skills rather than their understanding of how these fit together and relate to the conducting of research i.e. their research developmental process. This can lead to the view that research is atomistic and synthetic rather than holistic and analytical (Brew 2001). Further, it can produce a disjointed or unconnected undergraduate research curriculum (Bass 2012) as the research methods component may fail to adequately prepare students for their fieldwork and understanding the practicalities of undertaking the research project as a whole. However, it is important to acknowledge that students' learning approaches are not entirely dependent on teachers' pedagogical approaches but are also context-dependent (Laurillard 1979) sometimes varying depending on discipline (Lawless and Richardson 2002, Thang 2005, Hosein 2005), students' motivation (Diseth 2011) and their cultural context (see Watkins and Biggs 2001).

To encourage a more connected curriculum, student-centred pedagogical approaches such as active learning, enquiry/ problem-based learning and experiential learning have been introduced into research methods in some programmes (see for a review Earley 2014, Hosein and Rao 2014) to prompt students' deep learning through the connection of ideas. These student-centred pedagogical approaches are prefaced on

the idea that students will reflect on the research method processes more holistically and should become better researchers (Mantzoukas 2007, Milne and McConnell 1999). However, there is little empirical research to indicate the nature and content of these reflections and how it aids the students' research developmental process. For example, in the project-based and experiential pedagogical approaches by Braguglia and Jackson (2012) and Aguado (2009) respectively, formal reflections did not form part of the research methods pedagogy. Even when formal reflections are encouraged throughout the research curriculum, such as in the activity-based pedagogy reported by Benson and Blackman (2003), these were not monitored or evaluated for their usefulness in the research developmental process of all their students.

As students often focus on assessments and their learning is driven by the same (Watkins, Dahlin, and Ekholm 2005), one way to encourage a reflective approach is to design assessments which allow for reflection on the research processes. However, this may encourage superficial engagement with the reflection process as students may try to align with teachers' expectations. Hence, the research methods pedagogical approaches need to be closely aligned with the assessment strategy throughout the research curriculum to allow students to learn and be aware of research as a developmental process (Strayhorn 2009, Biggs 1999).

Perhaps one assessment method that can capture and aid students' reflections of the research process are reflective essays. Reflective essays are different from the

conventional academic essays as they require students to make sense of their experiences by building mental models of the process and knowledge that they have acquired and being aware of the knowledge state they have achieved (Klein, Moon, and Hoffman 2006). However, students' sense-making is often subconscious and it is through the process of writing a reflective essay, that the mental models and knowledge awareness become apparent (MacLellan 2004). The content of the reflective essays may provide a window into the students' thoughts on the research process (see Balgopal and Montplaisir 2011) similarly to the think-aloud protocol in the information processing research domain (Ericsson and Simon 1984). Although closely aligned, the reflective essay only provides students' constructed views of their experiences, not their actual experiences. It also permits the students to demonstrate different dimensions to their thinking (Levin and Wagner 2006) with respect to research methods concepts as well as their changing beliefs in their competence in research methods. Therefore, within the undergraduate research curriculum, the writing of reflective essays could help students express the extent of meaningful learning that may have occurred during the research process (Balgopal and Montplaisir 2011, Mayer 1979, 2002), their awareness of themselves as developing researchers (Åkerlind 2008, Bandura 1986, Brew 2001, Gardner 2008) and awareness of how their experiences can aid in producing future research (including the dissertation); all of which is reshaped, relearned and reformed by their experiences. In this paper, we aim to determine how the research methods

component in the research curriculum supports undergraduate students' development as a researcher by evaluating their reflections through a reflective essay within an enquiry-based pedagogical approach. Therefore, we intend:

- **Aim 1:** To investigate students' awareness of their research skills competency as an on-going process within an enquiry-based pedagogical approach
- **Aim 2:** To investigate students' awareness of themselves developing as a researcher within an enquiry-based pedagogical approach

These findings will have implications for how the research methods pedagogical field should develop.

Study Context

To examine students' awareness of the research process and skills, and their development as researchers, a reflective essay assessment was introduced in a compulsory second year Research Methods module which ran across five non-teacher training degree programmes in the Faculty of Education at Liverpool Hope University. The module intended to provide students with sufficient knowledge in research methods to prepare them to undertake a small-scale educational research in their final year. The module had two assessments and this paper will focus on the first assessment which was the reflective essay that focused on students' development of research skills and hence

their research process awareness.

The reflective essay assessment

After introductory lectures on the different types of research methods, students were briefed on the reflective essay assessment, which focussed on students using an enquiry-based learning approach to mimic the designing, planning and implementation stages of their final year research project. Students were required to plan a pilot research study in which they had to develop or expand on a research topic, select an appropriate research method (e.g. questionnaires, interviews, observations), develop a research instrument (e.g. questionnaire, interview schedule) and pilot the research method and instrument to aid them in exploring their research idea. The students were expected to write a reflective essay of about 3000 words on their research topic, research design and justification, their ethical considerations, their fieldwork experience and a reflection on how the pilot research study could be improved and finally, to evaluate the success of their pilot study. The students were given limited guidance in the development of their research idea and research instruments to enable them to reflect on their research decision-making process rather than the teachers'.

Methodology

To examine the students' awareness of their development of research competencies, their reflective essays were analysed qualitatively. Whilst research on reflective essays

normally tends to focus on the extent or the depth of reflection (see for example King and Kitchener 2004, MacLellan 2004), we were more interested in the reflective content to evaluate the students' research awareness in the planning and piloting of the research study.

Sampling frame

As the students in our study were involved in another research, we were asked by the ethics committee to limit the number of students contacted to minimise research exhaustion. Hence, we used a stratified sampling method to select 30 students from the approximate 300 student cohort (Sapsford 1999) to take part in the study based on their grades. Approximately 6 students were selected from each of the five degree programmes and represented the four grade bands, for a total of 30 students. The four grade bands were Grade A (more than 70%), Grade B (60 to 69%), Grade C (50 to 59%) and Grade D (40 to 49%). These 30 students were sent an email requesting permission to use their assessment for the purpose of this research. Sixteen students consented whilst there were no replies from the remaining 14 even after follow-up emails.

The timing of the emails, end of the academic year (in June) after student results had been officially declared, may be a possible explanation for the lack of response. However, we sent the emails at this time to ensure that there were limited power

relationships over the students to avoid them feeling concerned that their final grade will be influenced in case they choose (not) to participate in the study (Hammersley and Atkinson 1995). When the students granted permission to use their assessments, these were downloaded from the Virtual Learning Environment, Moodle. Students whose assessments were not on Moodle were automatically excluded from the initial stratified sample selection.

The sample consisted of fourteen females and two male students, which is the typical female to male ratio of the Faculty's degree programmes. Most of the students were from the Grade A band (7 students), with 3 students in Grade B, 4 in Grade C and 2 in Grade D. It is possible that we had more students from Grade A as they probably felt more comfortable consenting for their assessments to be used (see for example Sinclair and Cleland 2007).

Analysis

Among the 16 reflective essays, 8 students piloted an interview, 7 piloted a questionnaire and 1 used an observation. The students' reflections in the essays were open-coded in NVivo using an inductive approach (see Thomas 2006). The reflections were broadly coded into two main process themes: their awareness of the process of doing field research and their awareness of becoming a researcher (see Table 1). These two main coding themes are now discussed separately.

Table 1: The qualitative codings and the frequency of students

(Table 1 about here)

Process of Doing Field Research

From the analysis of students' reflections, it became apparent that there were four areas in the research process that the students appeared to gain more awareness of fieldwork and logistical issues, choice and improvement of the research instrument, data quantity, and quality and ethical issues.

Fieldwork and logistical issues

All students demonstrated an understanding of the challenges of fieldwork and logistics and in some cases awareness of how to overcome them in the future. Students identified the need to manage their time for sending questionnaires, for using an audio recording device together with taking field notes when conducting an interview, for finding an appropriate interview environment and the difficulty in simultaneously observing two sets of people, for example (quotes are taken verbatim from the essays):

For further research, I would consider using an audiotape in the interview so time would not be delayed and an accurate account would be taken of what the participant said. (Participant 6, Grade B, Female)

Furthermore, it was found to be challenging to observe both practitioners and children at the same time. (Participant 7, Grade A, Female)

Choice and improvement of instrument/ method

Twelve students indicated that piloting the instrument enabled them to consider the appropriateness of the instrument and/ or the improvements for making it fit for purpose. Six students suggested using an alternative method or using another method in conjunction with what they had originally chosen. In four cases, the students who recommended an alternative method felt that they should employ a mixed methods approach to obtain quantitative and qualitative data or triangulate data via observations.

Additionally, students identified flaws and possible improvement solutions for their research instruments with respect to the quality of data collected, the wording of the questions, issues with instructions / design and the need to reconstruct questions, for example:

Interpreting and analysing the data was one of the biggest challenges, as some of the 'yes' and 'no' answers led to limited information that was difficult to evaluate. To remedy this in future I would use more open-ended questions. (Participant 3, Grade D, Female)

Firstly I requested that the relevant answers from the multiple choices were circled. In a Word document this was physically impossible although both respondents had displayed sufficient initiative to delete the answers considered inappropriate hence leaving their chosen option in isolation. (Participant 16, Grade A, Male)

Data quantity and quality

Thirteen students identified how the research method or the questions included in the

research instrument played an important part in the quantity and quality of the data collected. In particular, students noted a variation in the quantity of data depending on the question, for example:

It was interesting to see the passion in the subject topic and the amount of responses a single question resulted in. (Participant 6, Grade B, Female)

I didn't find the use of a questionnaire being as effective as I would have anticipated, for this particular study. This was mainly due to the low response rate from participants and the lack of sufficient data given. (Participant 13, Grade D, Female)

In some cases, students followed up by proposing ways on how to improve the collection of data type and data quality. Further, they commented on the usefulness of their collected data in helping them to understand their research topic and how it can further the research process, for example:

The data gained was very insightful with the participants voicing similar concerns and opinions, so perhaps it could be completed on a grander scale, with some adaptations. (Participant 4, Grade A, Female).

Ethical issues

Although the students were aware of the main ethical issues as it was a topic covered within the module, eight students whilst piloting the method appeared to gain a deeper understanding of the complexity of the ethical issues that might arise in research

because of their chosen research topic, for example:

This research project taught the researcher that when addressing personal issues, they have to be handled with sensitivity. Although all data is anonymous and confidential, the participant may still feel uncomfortable because they have met the researcher face to face. This problem could be overcome by using a telephone interview, as the information collected will still be of similar quality, but the participant will feel entirely anonymous. (Participant 15, Grade A, Female)

Due to the location of the interview (the participant's employed school); a consent form was also required to be completed by the Head teacher to enable the researcher to gain access to the institution (Participant 8, Grade A, Female)

In Participant 15's case, she proposed an alternative method to minimise any potential mental harm to the participant whereas Participant 8 learnt that in different settings, there may be different levels of consent required. These realisations are of practical importance for when the students start their final year research dissertation in ensuring that the methods chosen are appropriate for collecting data, minimising harm to the participants and understanding the practical issues of gaining consent.

Process of becoming a researcher

When looking at students developing their researcher identity or their process of becoming a researcher, three areas were noted, students' metacognition of their research capability, their enthusiasm for research ideas and their increasing confidence in

undertaking research.

Metacognition of their research capability

Twelve students demonstrated a heightened awareness of the complexity of the research process how they situated themselves as a researcher within this process. These sentiments were mirrored across the various grade bands, for example:

From the research process I have learnt more than expected. Initially I had taken for granted the amount of work involved in creating a questionnaire. What I believed to be a simple straight forward exercise required a lot more effort and consideration that I ever would have thought, the nature of the questions can be the difference between the participant giving you an answer that is useful to the project and an answer that simply does nothing. (Participant 2, Grade C, Female).

I now hold a view that the researcher- in this instance myself- needs to adopt an attitude to research whereby the methods used are more scrutinised and evaluated just as much as the findings. (Participant 8, Grade A, Female)

In particular, students reflected on their developing understanding and changing perceptions of how they found research to be multi-layered. For example, Participant 2 noted that project management and questionnaire design were intricately linked to receiving quality data. Interestingly, it was notable that Participant 8 identified herself as a researcher and not as a student. The reflective essay thus offered the students an

opportunity to articulate their evolving understanding of the research process and the awareness of their roles as a researcher within this process.

Enthusiasm for research

In the reflective essay, three students appeared to show some enthusiasm about the research idea they had developed and for testing new research methods. The students indicated that these were lessons they wanted to take forward in their final year, which give evidence of their enthusiasm and keenness to grow as a researcher and how the teaching of research methods connects to their dissertation. This also demonstrates the recognition by the students of the focus of the research methods modules being a developmental process, for example:

I found that the topic that I chose to do this pilot study on was interesting and something I would like to research further in the future. (Participant 13, Grade A, Female)

[...] I am keen to try the 'triangulation' approach to conducting research in my next study. (Participant 8, Grade A, Female)

Consequently, through this pedagogical approach, it appeared that students were beginning to position themselves as researchers and were finding the relevance of the research curriculum. They were considering the extent to which they have control over the research process and deciding the methods and research areas they wanted to

explore further. There were some students who recognised that the area they had chosen to research was no longer of interest to them. There is a likelihood that students did not need the reflective essay to recognise what research topics they liked; but it provided them with the space to deliberate on the research process and their research idea and recognise what aspects of research enthused them.

Confidence in doing research

In their reflective essays, students noted their growing confidence in the research process. Three participants noted that they felt anxious when conducting the interview or handing out their questionnaires but this anxiety was reduced when they had collected their data, for example:

The researcher noted that they felt incredibly apprehensive and nervous. Yet it is felt these skills will be developed through experience of conducting interviews, as they explained they felt more relaxed for the second interview which took place later on in a similar environment. (Participant 4, Grade A, Female).

The self-reflections thus provided the space for the students to recognise their research growth and developed a self-awareness of the extent to which they have developed their research skills. It is through this introspection that they were perhaps able to improve their research self-efficacy (Bandura 1977, 1986).

Discussion

We used the reflective essay assessment as a tool within a student-centred pedagogy (i.e. enquiry-based learning) to determine how the research methods component of the research curriculum supported undergraduate students' development as a researcher. The first important finding from this research is that we are able to realise both study aims, that is, the reflective essay provided evidence that students were aware that research was a continuous process and demonstrated how students situated themselves as developing researchers within the research curriculum. Further, the reflective essay revealed that through the enquiry-based learning approach, students became cognisant of the processes related to fieldwork, logistical issues and designing instruments and how they, as researchers, were able to recognise the relevance of these for their future research practice.

The common issues that the students raised were those around time management and in the use of an audio tape. These are standard problems that are often addressed in research methods texts and could have been learnt in a more teacher-directed pedagogical approach. However, it is through the student-centred pedagogy of engaging in the research process and reflecting on their research experiences that they are able to convert these 'abstract conceptualisations' of the issues into 'concrete experiences' of the research process and of being researchers (Kolb 1984, Kolb, Boyatzis, and Mainemelis 2000). This reflection exercise led to a heightened self-

awareness amongst students of the research process and their metacognition of viewing themselves as researchers not just as students completing discrete research skills (Flavell 1976, Kruger and Dunning 1999, Pintrich 2002, Zimmerman 1990, Kolb 1984, Kolb, Boyatzis, and Mainemelis 2000).

To reiterate, one of the reasons that student-centred pedagogies were employed in this study instead of purely teacher-directed pedagogies was that it encouraged reflection on the research process and further it meant that assessments were unlikely to be about discrete skills such as the production of a questionnaire which can reinforce an unconnected research curriculum. Although the assessment of discrete skills could also have occurred in this study, a student-centred pedagogical approach allowed for the introduction of other assessment types such as the reflective essay which encouraged students to articulate their engagement with the research processes that promoted the holistic application of the research skills (e.g. questionnaire production). Therefore, student-centred pedagogies can empower the students to find their researcher's voice and enable them to have that journey to self-authorship in their development as a student researcher (Magolda 2008), providing an appropriate outlet is created for them to do so such as the reflective essay.

Moreover, the use of reflective essay, as part of the student-centred pedagogical approach for research methods, permitted students to make mistakes and it is the reflection on their mistakes which helps students to develop a better understanding of

the research process in an attempt to consider the reasons for and possible solutions to their failure. Consequently, the students may have less anxiety of failure of the unknown research process and in turn, this may promote their research self-efficacy (Bandura 1993). In this approach, the student is not being graded on the quality of their research but the ability to recognise their mistakes, reflect on the reasons for their failure and consider corrective measures to address the issues encountered in the research process with the view to ensure a successful research outcome in future which are all traits of a researcher. Thus, in this way, the research methods component is about the researcher reflecting on their actions (Schön 1987). Although the quality of research is important, the research methods component should act as a preparation for the research project/ dissertation in the research curriculum. Hence, it should focus on developing students' understanding of the research process and promoting their identity as researchers before they embark on their capstone piece of research, the dissertation.

Further, an unintended finding was that through the reflective essay, the study raised important issues of different learning opportunities that are made available to students depending on their research topics and areas. For example, students who were researching in schools became more aware of the ethical issues surrounding access and confidentiality. This demonstrates that the research curriculum (research methods and research dissertation components) cannot be used to impart or build the same level of awareness in all research issues and may vary with the research focus. Further, students

who have different fieldwork activities (for example, case studies, experiments) may then have different learning experiences. To overcome this problem, teacher-directed pedagogical approaches such as lectures may be needed in the research curriculum to ensure that appropriate information is imparted to students so that they are aware of the essential common issues within the research process (Deignan 2009, Wijnia, Loyens, and Derous 2011). Alternatively (or combined), teachers can enable students to develop a community of practice (Lave and Wenger 1991) where they can discuss and share ideas as well as seek guidance based on their own research experiences rather than solely being dependent on their teacher.

Based on the findings of this research, we suggest that the undergraduate Social Science research methods component of the research curriculum should focus on pedagogical approaches (teaching, learning and assessment) that develop the student as a reflective researcher who is capable of drawing together research skills in a holistic and analytical manner. Therefore, the research methods curriculum should perhaps be conceptualised more as students positioning themselves as the researcher in the research process rather than the researcher who creates research products (Fraser and Bosanquet 2006, Knight 2001, Beckman and Hensel 2009). The recommendation from this study, as discussed previously is perhaps the combination of student-centred and teacher-directed approaches as the most appropriate for developing our future undergraduate researchers. The latter enables students to have equitable and essential information on

research methods whilst the former provides the space for students to apply and reflect on this information within the research process and becoming a researcher.

Limitations

One of the limitations of the study, in determining how the research methods component supported the students' development as a researcher, was the use of the reflective essay as an assessment since the marking criteria may have scaffolded students' reflections (Chi 1996, Hmelo and Guzdial 1996) and also unintentionally influence students to write more positively about their research experiences. Firstly, the question, therefore, arises whether the reflections being written are indeed a window into the students' thoughts of the research processes or the students' construction of a reflection to meet the teacher's expectations. From a methodological point of view, there is a likelihood that students wrote the reflection with the teacher in mind, however, all reflections are written with an audience in mind (see Ferguson, Clough, and Hosein 2010) and hence reflections are always value-laden and cannot be completely objective. The second question is whether the idea of a graded reflective essay raises issues as to whether this is an appropriate method of encouraging reflection or whether asking students to reflect privately in a blog or a journal may encourage a similar articulation of the research developmental process. The private blog/ journal method may encourage some students to reflect, however, an assessment would

encourage all students to reflect although the level and quality of reflections may vary. Further, as assessments and marking criteria are created to reflect the learning aims and outcomes of a module (Biggs 1996, Biggs and Tang 2007, Moon 2004, O'Donovan, Price, and Rust 2004) as well as shaped by the professional values of the module convenors (Bragg 1976, Becher and Trowler 2001, Neumann 2001, Neumann, Parry, and Becher 2002) then if the marking criteria influenced students to reflect and focus on research as a process, then although it may not be optimal, it can satisfy the learning expectations of the research methods curriculum.

Further, the findings of students' demonstrating their development as researchers are based on students embarking on fieldwork through an enquiry-based learning approach. Future research needs to explore whether students will still view research as a developmental process when reflecting on desk-based research such as systematic literature reviews and secondary data analysis as well as theoretical activities such as literature reviews and data analysis and how reflections may change depending on other types of student-centred approaches.

Concluding remarks

Our study investigated to what extent student-centred pedagogies encouraged students to view themselves as researchers within the research methods component of the research curriculum through the use of reflective essays. Whilst reflections are

inherently expected within a student-centred pedagogical approach, reflective essays ensured that all students were engaging in some levels of reflection although the levels of these may be influenced by the marking criteria. Through the use of reflective essays, the study demonstrated that student-centred pedagogies allowed students to understand the research process as well as their research identity or socialisation into the research processes of their discipline (Austin 2002, Mendoza 2007, Hosein and Rao 2013, Bragg 1976). The study also highlighted the need to perhaps change the way we conceptualise the undergraduate research curriculum and aim for a curriculum that encourages students to develop the qualities of a researcher in the research methods component to ensure the holistic use of research skills.

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Table 1: The qualitative codings and the frequency of students

Codings	Number of Students
Process of Doing Research	
1. Fieldwork and logistical issues	15
2. Choice and Improvement of Instrument	12
3. Data Quantity and Quality	13
4. Ethical Issues	8
Process of Becoming a Researcher	
5. Metacognition of their research capability	12
6. Enthusiasm of the research idea	3
7. Changing attitudes towards research	3